

PVRC NEWSLETTER - APRIL 2001

PVRC CALENDAR

Weekly Wed
BWI Regional weekly breakfast. Wednesdays 7:30 am,
Basil's Deli, Elkridge Landing Rd near BWI.

Monthly
Over-the-Hill Luncheon. TBA.

Apr 5 Thu
PVRC/NC meeting

Apr 9 Mon
Central meeting at the Virginia location.

Apr 17 Tue
Northwest region meeting in Frederick, MD.

Apr 17 Tue
Tidewater Colony meeting night.

Apr 20 Fri
SWVA meeting at Shoney's in West Salem

May 3 Thu
PVRC/NC meeting.

May 18-20
Dayton 2001 Hamvention, Dayton, Ohio

May 26-27
CQ WPX CW. A 5-million award contest

June 1-3
PVRC Reunion-on-the-air. Details in the jumbo may issue!

June 23-24 Field Day.
Please support the PVRC W3AO FD effort. K3RA is the organizer.

TREASURERS REPORT by Dave Baugher, WR3L, Treas.

Thanks to all that ordered badges, about 80 in all. Some are still pending being received, so don't worry about them. They are due any day now. Twenty blanks still at The Sign Man. If anyone wants one but has not ordered, please let me know.

I would like to thank the following for donations to PVRC in February and March: N3HXB, W4CE, W4BQF, K3RR, K6ETM, N3FX, WZ3AR, KC8FS, K7LU, N3AM, W3EKT, K9JY, WE9V, N3HQX, WA7LT, W4DM, WR3Z, K4FPF, W3JRY, WK3I, W3TOM, W8JVP, K4TMC, K1SO, K4HOT, K5TK, VK6WW, W4RX, K2YWE, W4HJ, W3LPL, K3IXD, W0CN, KM3V, N8II, K2UOP,

K8OQL, W4JVN, and WA8WV.

JAY TERLESKI, WX0B IS THE PVRC SPEAKER IN APRIL.

Jay is an accomplished contester and a practicing Electrical Engineer who has developed a deep understanding of the theory and application of stacking or phasing beam patterns of various antennas. Details of Jay's background and the presentation were given on page 6 of the March 2001 issue of the PVRC Newsletter.

Two briefings are planned. First, on Friday night, April 6th, there will be (or was) a dinner with Jay at 5:00 PM to 7:00 PM at the Olive Garden on Route 7 in Tysons Corner in Northern Virginia. This will be followed by a briefing at 7:30 PM at the SAIC Tower Complex (where K4VV works) in a conference room that seats 45+, located very close to the intersection of Rt. 7 and Rt. 123 in Tysons Corner.

Then, on April 9, there will be a dinner at 5:00 PM with Jay the College Park Holiday Inn. Followed at 7:30 PM Jay will speak at the Capitol College.

Jay will use the same briefing materials for both events. He welcomes questions in advance, so that he may be sure to address most of our interests in the sessions. Please send me your questions or specific suggestions for him, and I will combine and forward them with or without attribution, as you wish.

Directions:

Holiday Inn: From the Capital beltway (I-495) proceed north on US route 1. The Holiday Inn is on the left (west) side of route 1. The dinner is in the Tree Room.

Capitol College: From the Holiday Inn, proceed north on US Rt-1 and turn right on to Powder Mill Road. Take Powder Mill Road through the Agricultural Research Center. Turn left on Springfield Road. Travel approx 1 mile and turn right into the Capitol College campus.

Jay will be the third in a series of very knowledgeable speakers, following Tom Schiller, N6BT and John Devoldere, ON4UN.

THE MAY ISSUE WILL BE THE ANNUAL JUMBO EDITION

As usual, the May issue will be the annual jumbo issue with the full listing of all PVRC'er worldwide and announcement of the PVRC reunion-on-the-air. The circulation will be to all members; once a member - always a member.

Please review the REFERENCE PAGE and let K3DI know of any changes.

Please let W2GG know if our database info need updating. I suggest that you refering to your listing in the last roster printed in April 2000.

Get in touch immediately with K3DI if you would like to advertise in the May issue with a circulation of 700 at the same rate as other issues with a circulation of about 430. The rate is \$100/page or \$33/one-third page, etc.

Deadlines for the May issue.

Roster changes = Apr. 16th

Articles & ads = April 20th

PVRC/NC MEETING MINUTES, 3/1/01 by Pete Soper, KC4XG

The meeting was held at Ryans Family Restaurant in Cary and attended by Guy K2AV (chair), Bob K4HA, Chuck K4NYS, Jim K4QPL, Brent KO4PY, Pete KS4XG (notes), Bob N2NFG, Bert N4CW, and Jim WW4M. Regrets from K4MA, AA4NC (preparing to operate from 8P9JA this weekend)

Membership: This was the first meeting for Chuck Wright N2NFG. Chuck is sponsored for PVRC membership by Bob K4HA. Chuck is interested in becoming active in contesting and recently took part in the CQ 160 phone test. Chuck has concrete and components in place for an 80 foot Rohn 25 tower and expects to put a TH7 plus 2 and 6 meter yagis on top. Chuck has been running barefoot up to now but plans to boost his signal with a Hercules II in the future. Welcome Chuck! Membership remains at 39.

Announcements. The chapter will be hosting a table or three for junque clearance and contesting info at the Raleigh Hamfest on Sunday April 8th. There will be "RUFZ Part Deux" to energize the area with some loud and fast CW music and annoy the nearby computer vendor booths, hi.

In conjunction with the Hamfest there will be a PVRC meeting at 11am at the booth for the convenience of members that have trouble making the regular monthly meetings. Details to follow via email.

The annual May special dinner meeting is being planned. Watch for K2AV email.

Well known contester Chad Kurszewski WE9V will be in the RDU area with his wife on the 9th of March and staying a couple days to explore a possible move to this area. AA4NC and K4MA will be hooking up with Chad (KS4XG too if possible) so contact one of them if you'd like to meet.

Pete KS4XG needs help to do a quick tear down of his old antenna farmette in Apex, NC on Saturday March 10th (house going on the market on the 12th!). Please email [\[email protected\]](#) if you can help. Directions and details will go out on the 6th.

Pre-Meeting Banter. N4CW cracked us up with descriptions of tuning procedures with the early rigs that he and his buddies up

North used when Bert was younger. With a 6 watt transmitter Bert "tuned for maximum smoke" using his finger as a power meter (ouch!) while his buddy looked for optimum arcs drawn from a pencil tip he touched to his transmitter output!

Member News. KO4PY was active in the NC QSO party and managed to use TR for logging. Manual post-processing of the log is required for handling mobile stations covering multiple counties but this sure beats paper. Brent will provide example TR configurations and notes for other QSO party support and WW4M will put it on the chapter web site (<http://pvrnc.org>).

K4HA suffered through the 160 phone contest with terrible conditions. Bob is heading down with K4CIA and K4NYS to visit Alan K4PB (Alan is a PVRcer now living in south Florida). The plan is to put a TH11, 40 and 30 meter dipoles on 60 feet of Rohn 25 that Allan has gathered up down there. They hope to active the new equipment in time to take part in the second half of the DX test.

N2NFG described his first CW Sprint experience, especially the relief that came when the test was finished! Bob discovered in this contest that his typing speed was the limiting factor. He's considering taking a typing class at a local community college. Bob said he was really energized by Sprint and looks forward to "enduring" it in the future as a means of boosting his skills. Bob amplified K4HA's complaints about the 160 contest. He also recently got a TS940 and said it is clearly out performing his IC751.

WW4M was not on the radio at all last month. Jim is sending out resumes and publishing his thesis. Jim had success with the PVRc reflector advertisement of his FT290R 2 meter all mode rig as K2AV is buying it. Jim would like to borrow or share a station for the WPX phone contest the weekend of March 24-25. His email is [\[email protected\]](#).

K4QPL described his stress with getting a full 10 team members together for CW Sprint (AA4NC joined in the 11th hour). Jim said he found Sprint very stimulating also and remarked that regular contests seemed to be running at half speed in comparison. Jim also took part in the NC QSO party but gave up on it after just a few dozen painfully sparse contacts.

K2AV described the M/2 DX/CW effort at N4AF. Along with Howie N4AF and Gary W2CS Guy piled up a 9mil score on a weekend of incredible propagation. There was one incredible run on 21.027mhz that lasted eleven hours with the three of them doing super fast operator changes so they never missed a beat.

N4CW was at KC1XX for the DX test as a relief operator. Bert described the awesome station and antenna farm (see <http://www.kc1xx.com>). All the run rigs are IC-781s and each

position has highly automated antenna switching and computer controls. Spots are passed both within the operator's local network and via outside packet traffic. The 80 meter delta loop stack on a 300 foot tower (booms made out of Rohn 25) was aspectacle to behold. Bert will be joining the N4AF gang for WPX but may return to KC1XX for CQWW this Fall.

Antenna Farm Agronomy by KS4XG. In planning an antenna farm at his new home SW of Apex, KS4XG has been doing terrain analysis with a computer. Pete shared some high points with the group, demonstrating his analysis toolkit with a laptop.

Starting with raw terrain data for new station location laboriously gathered by K3KO from computer maps, Pete used some custom Perl programs and the N6BV program "YT" to identify the best combination of antenna placements.

Input parameters for HF signal arrival probabilities as well as a variety of antenna configurations were fed to YT and it's analysis results were extracted and compiled into a database of performance data. The Perl programs automatically executed YT every few seconds for a a few dozen hours to compile a complete catalog of results for individual 2-8 element antennas 35-140 feet above ground and pointing in the six "interesting" directions (EU, AF, SA, OC, JA, AS). The results were compiled once with flat terrain surrounding the antennas and once with the new KS4XG station terrain data.

More Perl code was written to process an "antenna configuration file" that specifies the type, height and band coverage of a collection of antennas as well as which directions they can point. Then for each combination of antenna/band/direction a "figure of merit" is computed as the sum of products of the gain computed by YT for an arrival angle and the corresponding arrival probability (where it is nonzero). So, for example, a four element 15 meter monobander fixed on Europe at 115 feet might have a gain (reinforced or inhibited by the local terrain) of 16dbi for a signal arrival angle of 4 degrees. If the (highly averaged) probability of arrival of signals at 4 degrees from Europe is 15%, then the partial merit is $.15 \times 16$ or 2.4. For all the rest of the angles with non-zero probabilities partial merit values are computed so that the overall "antenna figure of merit" is derived. So for this example the data might be something like this:

angle	probability	gain		merit
2 deg	10%	15 dbi	1.5	
4 deg	15	16	2.4	
5 deg	20	17	3.4	
9 deg	55	10	5.5	
Overall Merit				12.8

(this example data is both fictional and oversimplified for

brevity!)

So this antenna, for this path and at the specified height above the KS4XG terrain scores 12.8. Additional antennas on the property contribute to an overall "antenna farm figure of merit".

This can be compared with results computed while varying height, rotatability, etc to arrive at the maximum performance with a given set of hardware. This exercise could be repeated with the terrain data of other stations to compare relative performance.

K3KO recently reported some rough comparisons of his location with the new KS4XG location and estimated a 4db advantage for KS4XG on some bearings.

The \$64 question is whether the terrain effects predicted by YT are valid. It's actually a lot more than \$64 since undoing and redoing antenna placements is an expensive and time consuming venture.

The new KS4XG QTH has a pronounced downhill slope with lots of "ripples" in the terrain in the direction of South America. YT predicts the most effective single antenna height for this path on 10 meters is 35 feet: a much higher antenna is absolutely counterproductive. This is hard to swallow given all the "higher is generally better" messages in the contesting literature. An encouraging contrast however comes from the periodic writings of N4KG on the Towertalk reflector (http://lists.contesting.com/_towertalk). Tom preaches that higher is definitely not always better but for this case on 10 meters YT is preaching that lower is always better! And there are more pronounced terrain enhancement effects predicted for the KS4XG QTH by YT for the low bands. Some of these seem like a "too good to be true" story. Time will tell.

One other interesting conclusion suggested by YT is that upward sloping terrain is not necessarily bad. The terrain at KS4XG toward Europe slopes from 430ft ASL to 450ft ASL over the course of 10000 feet with lots of "dips and bumps" in between. For some antenna combinations there is a pronounced advantage to this undulating terrain when compared with flat terrain.

Next steps are to automatically generate data for stacks and support for specifying these in the antenna configuration files. The Charlotte arrival data also needs sanity checking by seeing that it produces results that are in harmony with the data for Washington and Atlanta. The next meeting will be Thursday April 5th, 6pm at Ryans.

SVWA CHAPTER MEETING MINUTES, 3/9/01 by R. Michael Barts, N4GU

The SWVA chapter of PVRC met March 9, 2001 at the Western Sizzlin in Roanoke, VA. In attendance were N4EL, KA4BSA, K4IQ, WM3T, KF40KG, K1SO, KG6AR, KC9LC, and N4GU.

There has been a general lack of activity within the chapter with almost everyone too busy with work commitments for serious contesting. KG6AR did put in about 6 hours during ARRL SSB and was pleasantly surprised to find that you can actually hear (and work) Europeans on 75m from here on the east coast. All the other 6's think we're making them all up.

Emily, KA4BSA, XYL of Nat, N4EL, was voted in as a new member. She and Nat will be working the special event station K2BSA for the national Boy Scout Jamboree this summer, so she'll get plenty of practice handling pileups before next contest season.

N4EL has a new C3S and rotor to mount on his tower as soon as warm weather arrives. Even sitting in the box the antenna is already improving his contest performance as he experienced the thrill of running Eu on 15m during the ARRL SSB test for the first time this year.

Randy, KC9LC got an Elecraft K1 for Christmas but hasn't had time to get past the parts inventory yet. With the weather warming up maybe the soldering iron will too.

Several members are going to be active for the VA QSO party March 17-18. Jerry, K1SO, is going with the Roanoke Valley ARC, W4CA, up to Bath County for the contest. Anthony, WM3T, will be doing a massive mobile effort with K4UK to hand out lots of multipliers. N4GU is undecided how seriously he will try to defend his single-op title from last year (probably not very).

The next meeting of the SWVA will be April 20 at the Shoney's in west Salem, dinner at 6:00 PM followed by a business meeting.

CARROLL COUNTY PVRC MINUTES, 03/12/01, By Jim Nitzberg, WX3B

The Carroll County PVRC group met Monday, March 12, 2001 at the Westminster, MD Fire Training Center. The meeting was jointly held with the Carroll County Amateur Radio Club.

PVRC Members in attendance were: WX3B, N3YIM, W3XG, WB3AVN, N3FNE, N3VOP, K3CTR, K3IXD, W3ARS, WX3F, W3LPL, NY3A, and N3UN. Guests were N3MNM, N3SOK, KB3EMN, N3ZVI, and William Hoge (W3JJH's son). There were many other hams attending from the Carroll County Amateur Radio Club.

Although there was no formal PVRC business, it was great to see a big PVRC turnout!

There was a reason for the large crowd. We were fortunate to have Riley Hollingsworth, K4ZDH, (from the FCC's enforcement division) speak at our meeting. Riley spoke in his distinctive soft, down to earth and direct way about the work that has been done to clean up the bands over the past two years. Riley is entering his 3rd year of work, and categorizes his success as

measured, but with more work that needs to be done.

Riley has a powerful message for all amateurs; the message reiterates our responsibility to monitor how we behave and what we say AT ALL TIMES when we're on the air. This is especially true on the HF bands, where people from all over the world are listening to everything we say. He continues his discussion describing the huge commercial desire for the shortwave spectrum and the importance of maintaining a professional attitude on the air, which is by far the best way of protecting the amateur frequency allocations.

After an hour presentation, Riley entertained questions and received a warm round of applause for a job well done. I encourage those of you who agree that Riley is doing a great job to join me in writing a letter to the FCC Chairman at the following address:

The Honorable Michael K. Powell
Chairman, FCC
Room 8-B201
445 12th Street SW
Washington, DC 20024

Written letters are preferred over electronic mail.

The PVRC meeting was adjourned at 9:00 p.m. Good luck to all in the WPX Contest!

NORTHWEST MEETING MINUTES FROM NOTES BY Bob Biss, W8ZA

The NW region met at Tully's Grill in Frederick on 20 February 2001. In attendance were: W8ZA, W3LPL, NE3H, K3WC, K2UOP, K8OQL, N4MM, K3SKE, N8II, K3CTR, N3VOP, N3HBX, N3FX, and WZ3AR.

W8ZA, Bob, chaired the meeting for K3IXD, Ed, who had successful cataract surgery earlier on Tuesday. Bob opened the meeting about 7:20 PM after most everyone had finished having dinner.

John Hoge, W3JJH was voted into membership of the PVRC. He was not in attendance but has already attended the mandatory two meetings. John is sponsored by WX3B. On Johns' behalf Gene, K3CTR and Mike, N3VOP made favorable comments about John and his ham radio activities.

Bob Biss, W8ZA asked Frank Donovan, W3LPL (head of the Packet Cluster) why we were getting all of the west coast spots and also the double spots.

Frank gave about a 10 minute dissertation on what was happening and why. Seems like the packet protocol (designed some 14 years ago) didn't expect the internet to come into existence and therefore doesn't have a means for regionally filtering out

unwanted input. (That's my short interpretation -W8ZA). Individually, there are some programs out there that would help, but to take care of it at the hub is big bucks.

Maybe K3DI, Dick, could get Frank to write it up for the PVRC newsletter, since everyone was all ears and interested.

At the end of the meeting it was suggested we go for Mongolian BBQ sometime soon. I said that I would let Ed, K3IXD make that scheduling change.

Everyone was reminded of the Timonium Hamfest and also of Jay Terleski, WX0B, talks on the 6th and 9th of April.

Nice turnout and plenty of conversation during the 2 hours prior to the start of the meeting.

From around the table. NE3H: Joe has moved his node across the Susquehanna River from where it was onto the WITF tower and it is now about 1400' ASL. Joe had a problem with a Stackmatch Box and talked with Jay Terleski, WX0B, who said "You know they have a lifetime guarantee, send it back and I'll replace it". So said and done, but Joe doesn't know what he did wrong to begin with and Jay couldn't figure it out after examination either.

K3WC: Dusty has a NEW Force 12, 80M dipole waiting to go up along with the tower that's been waiting about a year now. He has also acquired a 6M modified SB-220 amp, also waiting for the tower to go up with a 6M beam. Come-on Springtime.

K2UOP: Tom talked about the performance of his Phased verticals on 40M this past contest season but is looking (make that thinking about) putting up a 40M beam atop the ridge where he lives near Romney, WV. Tom also received the pair of rocket launchers that he had ordered and is thinking about putting a catenary line between them and suspending a pair of 80M verticals and phasing them. Tom will be on in the WPX contest.

K8OQL: Jerry is contested out for until the fall season. Jerry was the Star Border at W8ZA this past winter having SO several contests from there along with the major DX contests. Jerry is going to the Visalia Hamfest for the first time.

N4MM: John is also going to the Visalia Hamfest. John was able to put a little time in to support the VA QSO Party recently, for 300+ Q's. He also talked about the multitude of scenarios that the CAC is working on regarding Club Area definition. All In All, probably there will end up being someone (CLUB) not happy with the results. John talked about the code requirement discussions that are ongoing and referred to K1ZZ recent editorial. He also touched on the 40M situation.

K3SKE: Dan said that there wasn't much going on at his QTH

regarding ham radio. He is trying to adjust to a schedule of working every other weekend. Dan said that Norm 'NRS was with us in spirit and tried to sign him in attendance. No such luck.

N8II: Jeff was limited to part-time at W8ZA for ARRL Phone this year due to work schedules. When he arrived on Saturday evening and sat down at the 15M position he thought the band had been worked out since there was nothing showing in the spot window...not realizing that the window was set for Multipliers This Band Only...hi hi

K3CTR: Gene has just passed the 1 year mark as an amateur radio operator. He credits Ed & Ed ('IXD & 'EKT) as his Elmers. I didn't catch all of his antenna's but he does have a rocket launcher supporting a Lazy U for 160M and he's really happy he followed 'IXD's advice and got a 746. Gene also upgraded to Extra Class about a month ago. (There is a Cushcraft MA5B tribander on top of the rocket launcher. He has/has had a 40m windom, 6m dipole, and 2m vertical - K3IXD)

N3HBX: John operated the 160M Phone contest and worked NO DX... conditions were really bad. He also operated 15M SB in the ARRL DX contest and plans on operating the WPX contest.

N3VOP: Mike said that not much was happening around his station. He's looking forward to the hamfest season getting started.

W3LPL: Frank said that it looks like the W3LPL M/M Crew won the ARRL CW DX contest. WAY TO GO TEAM... Frank stated that his 15m rotating tower worked like a charm. The 6 element 15M beams are 1, 2 & 3 wavelengths above ground. All fed with equal lengths of coax at the tower and all switching done at the tower. It will look different at the OPEN HOUSE from last year when we just watched the bare tower turn. hi hi...

Frank stated that 10M was really hot on Sunday the 18th. He was working VU2ZAP with the high beam when 'ZAP (running 100W, hitting 20db over on the S-meter) asked him to stand-by.. 'ZAP came back running 1W with an S8 signal...asked Frank to standby again and after a few moments of silence Frank switched to the bottom (quieter) antenna and heard 'ZAP asking "Frank, do you hear me?, Frank do you hear me? Well of course Frank heard him...he hears everything, but 'ZAP was running 1 mw.

N3FX: Tony put up an 80/160M vertical made out of irrigation tubing ala ON4UN's book and with the help of a crane. Tony has it working well on 80M but is having some problems with it on 160M.

WZ3AR: Nat worked the NAQP contest to the tune of 100K points. He also put Chincoteague Island, VA (NA-083) on the air recently

for 265Q's. Tony N3FX, Nat's Dad said a funny thing happened during that operation. The only resident ham on the island came knocking on the tent to collect his confirmation QSL.

W8ZA: I had been asked about my recent surgery. The surgeon removed my left thyroid on the 23rd of February and the growth was found to be benign. They did not have to crack my chest to do it, as was originally feared. I recouped enough by mid-week to call my regular operators and have them come over and operate the station for ARRL DX Phone. The antenna situation is pretty well stabilized and this off season will be devoted to making some antenna switching improvements and tracking down the noise that is distant from the QTH.

The next NW Regional meeting is scheduled for the third Tuesday of April, April 17, in Frederick, MD. The meeting begins at 7:30PM with members showing up for dinner about 6:00PM.

Thanks to W8ZA for chairing this meeting and writing up the notes. de K3IXD.

OVER-THE-HILL LUNCHEON
by Bill Leavitt, W3AZ

The Over-the-hill Group met at the location, where Andy, W3XE made arrangements in the past, at noon on Wednesday, March 21. The location is the Holiday Inn at the intersection of the Beltway and route 1 in Beltsville, MD. Those attending were W3CB, K3ZO, K6IR, W3GN, K3WX, AA4XU, W3UJ, W3ABC, and W3AZ. It is hoped to continue meeting here once every 3 month as in the past. W3GN brought in some old magazines and pictures. Conversations were directed toward pre World War amateur activities, equipment, etc.

N3RR Beverage Rx Antennas

(From <http://users.erols.com/n3rr>. Bill's yard approximates a triangle; the west street frontage is 575', northern side is 388' and the third side is a zig-zag hypotenuse with 3 break points. His web page has pictures and a site plan. editor)

In the summer of 2000, three of my EWE antenna feed lines became part of the shredded output of the lawn tractor. I have used EWE antennas since 1994. Their performance was "OK", but they never lived up to my expectations and never allowed me to really run stations on 80 meters in contests.

Obviously, my 80 meter rotatable dipole @ 149 feet was a star performer, but when I called CQ and could not pick out the weak EU stations calling me, I didn't want to be an "Alligator", so I needed to look for alternatives.

In the fall of 2000, I was talking to PVRC president, Brian, N3OC, who mentioned that when he was operating V26B they used

short Beverages and they seemed to work "OK". When he said short, he meant on the order of 200 feet or so. Well, I had installed the EWES because I thought I didn't have the room for Beverages. When Brian mentioned 200 feet, I decided to take another look.

It was already too late for the "two biggies" CQWW CW and SSB, so I wanted to see if I could install something for ARRL DX CW and SSB in 2001.

I looked at the plot plan of my property. As you see, I was able to shoe-horn in some Beverages. Here are the details.

One of the first things I did was read John Devoldare's, ON4UN, book: "ON4UN's Low-Band DXing", published by ARRL, Third Edition, 1999. Chapter 7 is the one to read if you want to know about Beverages. There's lots to learn in John's book, so I will not go into it here. I will give you the details of my installation though.

After thoroughly studying ON4UN's Chapter 7, I determined that I would be able to squeeze-in a 300 foot cone-of-silence (see page 7-9 in John's book) Beverage antenna and keep it in my back and side yards without having to go into the front yard. This was important since I had not yet told the XYL what I was going to do and I didn't want her to worry that there would be antennas in the front yard. So, I asked her to help me build a 300 foot Beverage!

We had several weeks of nice WX in January, 2001, so, with my XYL's help, one Saturday we constructed a 300 foot Beverage, aimed at Europe (45 degree heading) using commercial bamboo poles and some intermediate trees as supports. It wasn't pretty. The antenna wire varied in height from 6 feet to 10 feet. The last 50 feet of wire at each end I sloped to ground where I installed a 4 foot copper-clad ground rod. The bamboo supports were not as strong as I had estimated and they bowed dramatically once the 300 foot wire was attached, even though I supported the wire every 50 feet or so. I needed to find a better solution for future support masts.

At the feed-point, I used a K1FZ KB-1 Beverage transformer box. This box has a SO-239 connector at one end and two binding posts at the other end. The "guts" is a 9:1 impedance-matching transformer, just right for Beverages (and EWES). I purchased five of the K1FZ boxes in anticipation of installing several Beverages!

Well! On-the-air results were fantastic! On the 75 meter DX frequencies 3793 KHz and 3797 KHz, I was able to hear EU signals like I've never before. On 160 meters, the noise levels were reduced and the S/N levels were increased. IT WORKED and I was very excited!

I looked at my property plot plan and decided to install an East-West pair the next week. ON4UN's book says that these kinds of antennas should be mounted on separate masts, separated horizontally the same distance as they are above the ground. I asked my friend Frank, W3LPL, and he confirmed it. I then walked my property and concluded that I did not have enough room to separate the two Beverages by 10 feet (their proposed vertical height). Doing so would put one of them in the woods. So, I proceeded to design a single-mast, dual Beverage system with the antenna wires separated vertically by 1 foot. Again, I discussed this with W3LPL. He was concerned that there would be cross-talk between the antennas and thereby reduce the front/back (F/B) ratio. He also made a critical suggestion - If I want to implement a 1-foot vertical separation of the antennas, I should use independent ground stakes for each antenna. That meant that I needed to install four ground stakes, two for each Beverage (as normal). Frank suggested separating them by 2 feet on the ground.

I then asked Frank about the support masts he uses. Frank told me he uses an 8 foot iron "T-Post", driven into the ground about 3 feet, topped with a five foot fiberglass T-post. The fiberglass T-post is attached to the iron T-post with a stainless steel hose clamp. The Beverage antenna wire is then tie-wrapped to the fiberglass T-post at the 10 foot mark, or so. I recalled that I was at Frank's house one day last fall when he was installing these T-posts and I saw what he was using. Little did I know then that I would soon need to use this knowledge. So, I went to the Southern States hardware store and bought some supplies. The 8 foot iron T-posts were not available, so I settled for the 7 foot version.

Using ON4UN's book, I determined that the cone-of-silence length I could squeeze-in East-West would be 275 feet. That seemed very short for 160, but that's all I could fit in.

I used the 7 foot T-posts and drove them into the ground two feet. Based on my first installed iron T-post, I estimated that it would support the antenna wires even though it was only two feet into the ground. Certainly, it would work better than my first attempt using bamboo. I installed all five of the iron T-posts (every 50 feet, except the middle two at 40 ft) I then installed the 5 foot fiberglass T-post on top of them and had my five 10 foot supports! Now it was time for the wire.

Again, I turned to Frank, W3LPL, who said he used #12 THHN stranded wire for his Beverages. He also recommended that I "angle" the ground stakes into the ground so that the tip of the ground stake in the ground was about 6 inches closer to the center of the antenna than the end of the ground stake that protrudes out of the ground. That way, the antenna wire may be attached to an insulator and the insulator attached to the ground

stake without worrying that the wire will slip off the ground stake. I used the same antenna wire for both sides of the insulator.

The installation of the East Beverage began. I started at one end, attaching the wire/insulator to the ground stake and sloping the wire up to the first post-set which was 50 feet from the ground stake. At the 10 foot mark, I pulled the wire as tight as I could and tie-wrapped what would be the top wire to the fiberglass T-post and continued to the last T-post. Then I pulled the wire as tight as I could and attached the wire/insulator/wire to the ground stake at the other end sloping the wire 50 feet from the last T-post to ground stake.

I left a pig-tail of the antenna wire at each end and at one end, I installed a 470 Ohm 2 watt resistor between the antenna wire and the ground stake using open screw-on connectors available at electrical supply houses. At the other end, I inserted the K1FZ box between the antenna wire and the ground stake. Then I connected my RG-8X feed-line that I bought at the RF Connection.

I repeated the process for the West Beverage, this time mounting the wire at the 9 foot mark, one foot below the East antenna wire. Frank had asked me to report on my F/B test results, and I was, of course, anxious to see myself how well it would work.

What a world of difference that antenna made. After several days on both 80 and 160, listening to EA8, KH6, CT, T32 and others, I was seeing 20 dB F/B even on 160! I could null-out T32RD using the East Beverage, yet he was armchair copy on the West antenna on 160! BOY, did that convince me!

Because the iron/fiberglass T-post design was superior to the bamboo method I had previously used, I decided to install a new NE Beverage using this T-post design that I learned from Frank. But before I just replaced the 300 foot antenna, which worked very well, I thought I'd ask some other low-band users what they use and ask if they thought a 500 foot Beverage would work better than a 300 foot Beverage. I had taken another look at my plot-plan and determined that I just might be able to put up a 500 ft Beverage if my XYL would allow me to use the front yard. More about this later.

I spoke to Jon, AA1K, about the technical details. He told me that 500 ft would definitely be better than 300 ft, even though 500 ft was not a cone-of-silence length. Frank, WB3AVN, said the same thing. I also asked Jon whether it was necessary to slope the last 50 feet ends of Beverages to the ground. ON4UN's book goes into much detail about the need for this. AA1K said that none of his Beverages are sloped due to the population of deer at his QTH. They would run into sloped wires 50 feet long! Jon also said that he does not notice any F/B or F/S degradation due to not sloping his Beverages.

Well, the population of deer at the N3RR QTH is also large, but I wanted to test sloping/non-sloping Beverages anyway. So, I decided to slope the E-W Beverage, but not the new 500 foot Beverage.

As I installed the 500 footer, I did decide to slope the feed-point end from 10 feet to 6 feet over the final 50 feet. From the 6 foot level, I would take a rather sharp angle to the ground stake/feed-point.

Well, the results are in: All three antennas perform excellently! The F/B on the 500 foot EU Beverage is 20dB and the loud EU signals are just about as loud as on my 149 ft high rotatable dipole except that the S/N is increased. I do have a 20dB pre-amp in the shack that I can use when necessary. The noise reduction of the Beverages is fantastic, much better than the EWEs I had used. During the 2001 ARRL DX CW contest, I called CQ on 160 for the first time in a contest. I ran 20 EU stations during that 1/2 hour. Conditions were great and my 500 ft Beverage was great as well!

Likewise, the 275 ft Beverage worked very well, even on 160. While I still have one EWE still in use (South), I will be replacing it with a 200 foot Beverage this Fall. I'll also add a SW wire at 9 feet to the 500 ft Beverage as well.

As far as how well or better the sloping-end 275 foot Beverages performed than the non-sloped (or partially-sloped) 500 foot Beverage - I think that sloping the ends doesn't help much. I notice no degradation in F/B of the 500 foot Beverage when using my South EWE as comparison. But, I may slope the ends of the 500 foot Beverage when I reinstall it this fall, deer and all, just to see if there is any difference.

The big news is that short, 275 foot long Beverages do work and they work better than EWEs. I plan to replace that South EWE with a 200 foot Beverage this fall.

Oh, how did I get to use the front yard for the additional 200 feet? I told the XYZ that I would remove the Beverages each spring and re-install them in mid-October to allow us to mow the lawn. That meant the front yard Beverage was "temporary" and it was approved! After all, you can see it from the dining room window. :-(

Editors note: I visited ON4UN in 1995 and noted that his Beverages were also "temporary." He used his neighbors farm land after the crops were removed. John mentioned that one fall was late and he was not able to reinstall the beverages until the day before the CQWW-SSB. -K3DI

PLANNING STARTED FOR FIELD DAY.

Rol Anders, K3RA is already getting pepped up for the big field day operation by PVRC-W3AO. It will take a bigger on-site team as well as off site folks supporting a record breaking Field Day. This year, the local CT network will be working to help pass home stations among their some 26 band modes stations. This is most important at VHF/UHF where the operators are most likely to be begging for QSO's from local members and the masses of non-members. The W3AO site will again be at KE3Q's dad's place in Tolchester MD, with 12 to 15 or more 50 foot towers installed right on the bay on a 35 foot cliff. W3AO will be glad to QSP all FD messages.

S C O R E S by Bob Dannals, W2GG

* Changes/additions/deletions *
 * to W2GG via email or packet *
 * NEW EMAIL: [\[email protected\]](#) *
 ### = missing information

160M CW RESULTS (FINAL 3/6/01)

CALL	QSO	ST	DX	SCORE
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SINGLE OP HIGH POWER

W4ZV	1171	58	52	456,940
W4MYA	1138	58	51	397,632
N4CW	842	56	30	183,782
K4ZW	710	50	34	174,468
N3OC	568	53	34	143,898
K3SV	604	##	##	126,984
W3EKT	307	47	23	60,340
W4YE	325	50	16	55,704
N4MM	306	46	20	54,978
K2UOP	280	43	23	50,952
K4VV	340	42	14	47,096
N3UM	257	43	17	40,080
K2PLF	270	45	9	34,560
N3AM	276	43	8	32,538
K8OQL	204	42	6	22,752
N8II	157	34	17	21,930
K3MM	150	(50)		19,150
WM3T	192	41	4	19,035
W2YE	159	36	4	14,360
W4HJ	142	35	5	13,280
N4TL	61	25	1	3,406

SINGLE OP LOW POWER

K1HTV	704	54	24	135,876
K7SV	507	49	24	92,415
WJ9B	567	52	14	85,932
N2NFG	507	50	18	80,784
W2GG	331	39	13	41,548
K3SWZ	###	##	##	37,950

WK4Y	250	40	6	25,300
K4QPL	195	38	4	17,934
W4VC	184	(41)		16,564
W3CP	158	(40)		15,040
K2YWE	137	35	3	11,742
WX3B	107	(32)		7,712
N3UN	101	33	0	7,458
WB4DNL	39	(23)		1,932
SINGLE OP QRP				
WK3I	545	(62)		75,454

MULTI OPERATOR

NY4A	1036	55	50	356,790
W3UR	598	53	38	177,000
K4MA	496	51	34	119,000
W2XL	746	57	31	87,224
W4NF	423	47	26	82,198
K3KO	450	51	20	81,863
N3AM	276	(51)		32,538
W3HVQ	167	37	22	30,267
WA4QDM	250	42	5	26,367
K3DI	185	49	5	24,246

 46 LOGS CW TOTAL 3,644,999

Multiop operators:

Single op plus packet unless
 indicated below.

NY4A N4AF W2CS
 W2XL K4HA (plus 1 nonPVRC)
 □ARRL DX CW FINAL (03/22/2001)

CALL	BND	QSO	CTY	TOTAL
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SINGLE OP HIGH POWER

K3ZO	3556	419		4,469,892
N4ZR	2899	357		3,104,829
K2PLF	2085	396		2,475,792
W3IO	1267	328		1,244,760
N3UM	1016	293		893,064
W4YE	965	294		851,130
W3AZ	908	270		735,480
K2UOP	779	299		698,763
W4BQF	1027	205		629,760
W4ZV	10 1752	113		593,928
W2YE	633	237		450,063
W3GN	651	224		437,472
W4IF	358	161		172,914
N3JT	370	149		165,390
W4VC	341	144		147,312
K6ETM	297	162		144,342

N1KC		267	143	114,543
K3SV	80	328	67	65,727
W4ZYT		50	36	5,400

SINGLE OP LOW POWER

N4YDU		1589	355	1,692,285
N1WR		1570	324	1,525,068
WJ9B		1561	302	1,404,300
N4MM		732	305	669,780
W3CP		674	250	505,500
W3DAD		629	207	390,609
K1KO		449	169	225,615
AA4KD		386	193	223,494
N3UN		331	155	153,450
K4QPL		185	102	56,610
W4HM	80	178	56	29,904
WB4DNL		105	83	26,145
W4SD		103	##	19,776

SINGLE OP QRP

WD3P		188	113	63,732
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SINGLE OP ASSISTED

N3RR		2749	493	4,065,771
W4NF		2292	443	3,046,068
K3KO		1544	411	1,903,752
N4ZJ		1645	381	1,880,235
W3EKT		1081	419	1,355,046
W3IO		1267	328	1,244,760
W3HVQ		1028	371	1,144,164
N3AM		963	374	1,080,486
W3UJ		951	335	955,755
W3UL		638	260	497,640
K3SWZ		70	44	9,240

MULTI SINGLE

W4MR		3376	471	4,708,116
WR3L		901	101	275,427
WX3B		491	145	212,715

MULTI TWO

K4JA		6351	580	11,049,000
NY4A		5495	550	9,051,900
NR4M		4061	501	6,091,659
W8ZA		2778	474	3,948,894
K3DI		1673	387	1,937,709

MULTI MULTI

W3LPL		8693	672	17,504,928
W4MYA		6749	603	12,189,042
N4RV		1814	405	2,202,797

DXPEDITIONS

HR6/N4MO		1600	60	288,000
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(10 m only)
R3/K3NA 378 100 113,400
- - - - -
57 LOGS CW TOTAL 111,143,333
- - - - -

OPERATORS:

K3DI K2YWE K3DI plus 1 non-PVRC
K4JA W4JVN K9GY K9JY WE9V 1nPVR
N4RV N4RV N4VV
NR4M K7SV NR4M K4EU K1SE K4GMH
K4EC WA4JUK
NY4A K2AV N4AF W2CS
W3LPL W3LPL K1HTV W2GG ND3A K3KU
AI3M K3LP K3MM N3OC K3RA
K3RV KD4D K4ZW
W4MR K4MA AA4NC
W4MYA K4GAU K4WMS KC8FS N3SB W4HJ
W4MYA WA4PGM WA4QDM WA8WV
WX3B WK4Y WU4G
W8ZA K8OQL N8II W8ZA WD3A 1nPVR
WR3L AA3SC KA3TUL
WX3B WX3B N3SB

CQ 160M SSB #3 (Mar.28.2001)

CALL	QSO	ST	DX	SCORE
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SINGLE OP HIGH POWER

W4MYA	1043	57	24	200,070
N3HBX	654	51	8	85,078
K2UOP	594	51	11	81,964
K3KO	250	44	5	27,342
W4HJ	282	38	4	25,914
K2PLF	179	37	2	15,444
N3UM	152	32	6	13,414
N4CW	145	31	2	10,362
WA4QDM	100	28	3	7,099
W2BZR	96	24	2	5,590
4U1WB	52	16	1	1,819

SINGLE OP LOW POWER

N2NFG	430	45	7	48,776
WK4Y	340	32	3	25,025
N4MM	172	43	5	18,384
K4TMC	146	32	2	10,608
NA1DX	173	27	1	10,360
W2GG	118	29	4	8,778
W3EKT	112	27	3	7,950
K3DNE	160	26	1	7,344
AD3F	70	(23)		3,427
W3CP	61	(22)		3,014

SINGLE OP QRP

MULTI OPERATOR

K3IXD	301	40	6	30,774
K3DI	123	34	3	10,286

DXPEDITION

HA/W0YR	536	1	54	152,570
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24 LOGS SSB	TOTAL	811,392
47 LOGS CW	TOTAL	3,674,159
71 LOGS MIX	TOTAL	4,485,551

Guest Operators:

4U1WB AJ3M op.

Multiop operators:

Single op plus packet unless
indicated below.

ARRL DX PH #4 (Mar.28.2001)

CALL	BND	QSO	CTY	TOTAL
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SINGLE OP HIGH POWER

K4ZW		3612	410	4,442,760
K3ZO		3475	418	4,357,650
KV3R		1345	312	1,257,984
N3HXQ		1058	288	911,520
W4ZV	10	2265	130	883,350
N4MM		753	290	655,110
K2UOP		866	299	776,802
N4CW		764	229	524,868
KS4XG	15	1433	108	463,968
N3UM		581	246	428,778
W3AZ		599	208	373,776
W2YE		557	208	347,568
N3JT		499	160	239,520
W2BZR		421	159	200,340
N4ZR		369	170	187,680
N3UN		331	148	146,964
W4YE		276	126	104,328
W4ZYT		250	126	94,500
K3GV		216	111	71,928
N3HS	10	247	69	51,129
N4EL	15	239	69	49,473
W3JRY		155	96	44,640
K3IZ		109	78	25,506
K3SV	80	77	44	10,164

SINGLE OP LOW POWER

KC8FS	1451	291	1,266,723
W3MR	1250	291	1,090,000

W3UJ	1003	282	848,538
W3DQ	643	233	449,457
N4YDU	558	206	406,644
K6IR	324	149	144,828
K4QPL	243	129	94,041
AA4KD	202	127	76,962
K3DSP	10	308	77
WB4DNL	172	109	56,244
W3CP	10	215	64
K1SO	143	89	38,181
K3CTR	116	68	23,664
W4SD	10	100	##
N3EYB	38	27	3,078

SINGLE OP QRP

SINGLE OP ASSISTED

N3RR	2605	491	3,837,165
N3AM	1274	365	1,395,030
N3HF	1113	368	1,228,752
W3EKT	1010	338	1,024,140
K3IXD	948	334	949,896
N3HBX	15	1324	127
NA1DX	537	273	439,803
W3HVQ	521	281	439,203
K3KO	505	281	425,715
W3UL	564	234	395,928
K3GEG	461	263	363,729
W3OU	417	210	262,710
N8CH	136	87	35,496

MULTI SINGLE

MULTI TWO

K4JA	6008	566	10,201,584
W3GNQ	2373	468	3,330,288
MULTI MULTI			
W4MYA	4821	539	7,701,771
N4RV	1820	423	2,309,588
K3DI	1093	370	1,221,000

DXPEDITIONS

8J9JA	8639	328	8,500,776
HR6/N4MO	2950	59	380,550
(10 m, LP)			
MM0LEO	300	72	64,800

Special Operation from FLA

	26	24	1,872
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60 LOGS	PH TOTAL	66,284,481
57 LOGS	CW TOTAL	111,143,333

117 COMBINED TOTAL 177,427,814

- - - - -

□ LAST YEARS RESULTS (SSB & CW)

Club	Logs	Score
YCCC	253	394,997,526
FRC	164	322,686,531
PVRC	119	173,331,348

OPERATORS:

8P9JA K4MA AA4NC
K3DI W3OQ K3DI
K4JA K4JA K9JY WE9V W4JVN plus
one non-PVRC
N4RV N4RV K4VV
W3GNQ W3ZZ N3OC W3RFC WI2T
W3GNQ + one non-PVRC
W4MYA KF4QQY N4DEN N4EHJ NK4H
W4HJ W4MYA WA4QDM WK4Y
plus one non-PVRC

CQ WPX SSB (#2 03.27.2001)

CALL PWR BAND QSO MULTS SCORE

			SINGLE OP - UNASSISTED		
NY4A	C	10	2152	883	4,447,671
N3HBX	C	10	1187	629	1,832,906
W3UJ	B	TS	997	530	1,349,910
K2UOP	C		903	499	1,136,223
4U1WB	C	TS	1095	494	995,410
N4MM	C		798	496	984,064
N3UN	B		709	417	756,855
W2GPS	C	TS	725	419	713,138
K3DSP	B		644	415	653,210
KC8FS	B	TS	612	381	612,267
N4YDU	B		507	336	426,384
N3FX	C	TS	490	329	411,908
K3GV	C		436	292	299,884
W3UL	C		381	270	235,170
N3HS	C		300	243	199,746

* SINGLE OP - ASSISTED

KV3R	C		1558	740	2,823,840
NA1DX	B		752	498	989,526
W2GG	B		814	485	979,700
K3KO	C		450	443	559,066
K3IXD	C		450	341	391,809
K1SE	B		147	132	41,052

* MULTI-SINGLE

* MULTI-MULTI

* DXPEDITIONS

TI7/N4MO	10	2113	712	3,574,240
7J1AOE B		322	195	174,330

A = QRP

B = LOW POWER

C = HIGH POWER

TS = TRIBANDER +
SINGLE ELEM 160-40

BR = BAND RESTRICTED

R = ROOKIE

- - - - -
23 LOGS SSB TOTAL 24,588,309
- - - - -

OPERATORS:

4U1WB AJ3M

7J1AOE K3DI

NY4A W4ZV

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REFERENCE PAGE - Updates please to K3DI - 03/25/01

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PVRC Charter Members:

W3GRF (SK), W4AAV (SK), W4KFC (SK), N0FFZ (SK), W4LUE (SK), W7YS,
VP2VI (W0DX), W3IKN, W4KFT.

PacketCluster Contest/DX System, MHz:

W3LPL	Glenwood MD	145.590	441.250
KE3Q	Bowie MD	145.570	445.375
WR3L	Baltimore MD	145.610	440.950
N3RR	Rockville MD	145.510	441.325
K3SKE	Frederick MD	144.930	441.125
W3YOZ	West River MD	144.910	
N1WR	Lusby MD	145.690	
N4OHE	Mt.Weather VA	145.710	446.025
NE3H	Harrisburg PA	144.970	*
K3MQH	S Mountain PA	145.630	
N4SR	Woodbridge VA	145.630	*
K4FJ	Mt. Vernon VA	145.770	*
W4XP	Bull Run Mt "	144.990	

This system is sponsored by the Potomac Valley DX Spotting
Network except "*" are independently funded by each SYSOP.

PVRC on Internet.

PVRC web site by N4ZR.....:

<http://www.pvrc.org>

PVRC/NC web site by WW4M

<http://pvrcnc.org>

PVRC reflector: (editor N4AF)

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PVRC dues and ARRL renewals: The annual dues are by donation.
PVRC gets a cut from ARRL renewals sent via Dave Baugher, WR3L,
615 Rockway Beach Ave, Baltimore, MD 21221. Dues and renewal
checks should be made to PVRC. Thank you.

Newsletter Editor: Dick Wilder, K3DI, 913 Shore Acres Road,
Arnold, MD 21012-1724. Voice 410-757-6706, FAX 410-757-6720,

DXcluster, and [\[email protected\]](#). The deadline is around the 20th of the prior month.

Autocall column editor: Barry Thaysen, K3UG. 6619 Buffalo Rd, Mt Airy, MD 21771

CENTRAL: The Central Meeting is always the second Monday (except June, July, and August) at 7:30 pm. The central meeting generally alternates between MD and VA locations. A pre-meeting dinner is usually held between 5:00 and 6:30 pm. Check via 147-repeater.

VA LOCATION: The Patrick Henry (Public) Library, Route 123, Vienna, VA.

MD LOCATION: Church of the Nativity (Episcopal), Route 5, Temple Hills, MD. Pre-meeting dinner at Topoleno's Restraunt about 5:30 or 6:00.

NORTHWEST: Ed Steeble, K3IXD, 410-489-7616(H), [\[email protected\]](#), Optional dinner about 6:30 and meeting at 7:30 on third Tuesday of every month at Tully's Grill, 1080 W. Patrick St., Frederick, MD. Same center as Shoppers Food Warehouse. Talk-in is 147.000 (-) MHz. Essentially includes WVA too.

NORTH CAROLINA: Chair: Guy Olinger, K2AV, [\[email protected\]](#); Sec: Pete Soper, KS4XG, [\[email protected\]](#), h:919-362-4635, w:919-460-2991. POC is K2AV and KS4XG. Howie Hoyt, N4AF, [\[email protected\]](#) is PVRC reflector editor. PVRCNC.ORG by WW4M. PVRC/NC meets at 6:00 pm the first Thurs of Sept through April at Ryan's Family Steakhouse at Crossroads in Cary; June at the Raleigh Hamfest.

TIDEWATER (VA) COLONY OF PVRC: Don Lynch W4ZYT 757-486-0728 [\[email protected\]](#). Meetings the 3rd Tuesday of every month are held jointly with the VA DXCC at The Golden Corral corner of Battlefield Blvd South and Volvo Pkwy in Chesapeake, VA. Easy access from I-64 at Rte 168 (Battlefield Blvd S) exit. Dinner at 1830 and meeting at 1925.

SOUTHWEST VA CHAPTER: Coordinator: John Mitchell, K4IQ, Catawba, VA 540-384-7377, [\[email protected\]](#). Monthly meetings alternate between Roanoke area locations.

THE BWI REGIONAL/PVRC: Weekly breakfast Wed at 7:30 AM at Basil's Deli Port on Elkrdige Landing Rd 1/4 mile South of Winterson Road 410-850-4333. Director: Ike Lawton, W3IKE, 410-263-2830. Secretary: Howard Leake, W6AXX, 410-465-7008, [\[email protected\]](#).

OVER-THE-HILL LUNCH BUNCH: Rotating hosts announces meeting info. Ben Shaver, AA4XU, 703-534-4740, [\[email protected\]](#), MainstreetUSA, Annandale; Host TBA, Holiday Inn, College Park; and Bill Leavitt, W3AZ, 301-292-5797, Best Western, Oxon Hill

PENNSYLVANIA: Steve Cutshall, K3TZV, [\[email protected\]](#),
717-763-0462.

RAPPAHANNOCK: Steve Bookout, NR4M (ex-NJ4F) [\[email protected\]](#)
Also, Larry Schimelpfenig, K7SV, [\[email protected\]](#)

WOODBIDGE: Jack O'Mara W4NF, [\[email protected\]](#) H:703-791-3302
W:703-415-0200 x3018 and Cliff Deel W4CE, [\[email protected\]](#)
703-491-0841

CENTRAL VA: Bob Morris, W4MYA 804-457-9011
[\[email protected\]](#) CVCC/PVRC monthly meetings are held
the 2nd Tuesday at the First Mennonite Church on Staples Mill Rd
at 7:30 PM. Optional 6PM-ish dinner at the Crazy Greek Rest,
Staples Mill Rd. Talk-in is 145.430 MHz.

SOUTHERN MD: Chair: Barry Shapiro, WR3Z. H:301-862-2466
[\[email protected\]](#) Meetings to be held at the home of
N1WR.

EASTERN-SHORE (DEL-MAR-VA): Dallas Carter, W3PP 302-875-0550
[\[email protected\]](#)

SHENANDOAH: Bill Hinkle KV3R [\[email protected\]](#) 304-567-3138

NORTHEAST: WR3L See treas info.

ANNAPOLIS CREW: K3DI. See editor info.

CARROLL COUNTY GROUP: Jim Nitzberg, WX3B. 410-374-9233
[\[email protected\]](#)

OTHER MEETINGS based on prior year(s):

May.	Meeting at Dayton Hamvention
Jun.	W3LPL open house & PVRC/FRC joint meeting at noon on the Saturday before Field Day, 6/16/01
??	When joint FRC/PVRC is at FRC, they announce the date.
Jul.	PVRC/NC cook out
Jul.	Open house, W4MYA, Goochland,
Aug.	NCDXA/PVRC Fowlfest at W3YOZ
Sep.	PVRC meeting at the FARfest Bowie
Sep.	Open house, WR3L, Baltimore
Dec.	Christmas dinner, DC area.

5 MILLION (CLUB COMPETITION) AWARD
Month and number of the full week end.

Jan 3	ARRL VHF Sweepstakes
Jan Last	CQWW 160m CW
Feb 3	ARRL DX CW
Feb Last	CQWW 160m SSB
Mar 1	ARRL DX SSB

Mar Last CQWW WPX SSB
May Last CQWW WPX CW
Sep 2 ARRL VHF QSO Party
Oct Last CQWW DX SSB
Nov 1 ARRL Sweepstakes CW
Nov 3 ARRL Sweepstakes SSB
Nov Last CQWW DX CW
Dec 1 ARRL 160m CW
Dec 2 ARRL 10m Mixed

Standings at: <http://www.qsl.net/n4zr>

Roster updates at: <http://www.pvrc.org/pvrcmm98.htm>